DOCUMENT RESUME

ED 395 695 PS 024 266

AUTHOR Leak, Catherine
TITLE First Graders' Strategies for Inventing Spellings.
PUB DATE 1 Aug 95
NOTE 58p.; Paper presented at the Annual Conference of the American Educational Research Association (New York, NY, April 8-12, 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Case Studies; Classroom Environment; Cognitive Style; *Creativity; Grade 1; *Invented Spelling; Primary Education; *Spelling Instruction; Thinking Skills; Word Recognition; Writing Skills
IDENTIFIERS Spelling Patterns

ABSTRACT

This study examined the process of invented spellings among first grade students, focusing on the conscious thoughts of students as they invented spellings, including strategies and attitudes. The researcher became a participant-observer in a first grade classroom, comprised of 28 students. Based on observations of the writing environment and on interview tasks, and as illustrated by case studies, spelling strategies used by the children included: (1) spelling by analogy; (2) remembering one's own spelling of a word; (3) seeing the word spelled elsewhere; (4) knowing a spelling; (5) focusing on a specific spelling of a word segment; (6) sounding out; and (7) using specific letter-sound knowledge. Data indicated that these children became increasingly aware of useful and appropriate strategies. These strategies were whole word-based, word and segment-based, or letter-based. Attitudes and concerns about spelling demonstrated by students included: (1) concern with written form; (2) willingness to accept different spellings; and (3) rethinking original spellings. Insights gained from this study could help classroom teachers in personalizing spelling instruction for children. Word lists are appended. (BGC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 395 695

First Graders' Strategies for Inventing Spellings

Catherine Leak

University of California, Berkeley

August 1, 1995

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Catherine Leak
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

PS 024266

BEST COPY AVAILABLE

First Graders' Strategies for Inventing Spellings

Comprehensive studies of children's invented spellings tend to focus on the characteristics of the resultant spellings (Chomsky, 1976; Henderson, 1981, 1985; Read, 1971, 1986; Treiman, 1993). These studies have been important in showing what spelling knowledge children have as revealed by their invented spellings. Unfortunately these studies stop there. By considering only the end result of spelling attempts, research has ignored much of the knowledge that children have and use in inventing spellings. In order to investigate invented spelling as a means of instruction for spelling and writing in the primary grades, it's important not only to look at what children do, as revealed by resultant invented spellings, but also what they are consciously[1] trying to do in the process of inventing spellings.

Through the present study I looked at the process of inventing spellings, with particular attention to the conscious thoughts of first graders as they invented spellings. I was curious to see what strategies this group of first graders reported using when inventing spellings, and what attitudes they revealed about invented spelling.

It is important to consider what knowledge children bring to spelling, and what knowledge they make a point of using in inventing spellings. Such insight can be extremely helpful to the classroom teacher who needs to personalize spelling instruction. By examining conscious spelling strategies, the teacher can become aware of the preconceptions individual children have about the spelling process, and about spelling rules. And, like the classroom teacher, we as researchers cannot begin to discuss the development of spelling knowledge until we look at the process of constructing spellings, as well as the final product.

---

[1] Piaget has defined consciousness as "the child's ability to produce a coherent verbal account of the mentalprocesses underlying his behavior" (Ginsburg & Opper, 1988, p. 176)

METHOD

The Classroom

In order to undertake this study I became a participant-observer in a first grade classroom in a public K-2 school in the San Francisco Bay Area. This particular classroom was chosen because the classroom teacher, Linda, encouraged her students to invent spellings whenever possible. This was important for my purposes because I was interested in observing the children in the process of inventing spellings.

From the beginning Linda made it clear to the children that I was interested in their writing and especially their invented spellings. I did not ask her to make this explicit, and may have preferred the children to just know I was interested in their writing in general, but perhaps since the children did know I was genuinely interested in their invented spelling they were more eager to share their spellings with me.

Since I had taken on the role of participant observer, rather than just observer, I found myself having to define my role in the classroom for the children. They often asked me if I was a teacher, and when I told them I was not, they wanted to know what I was. They seemed comfortable with my explanation that I was a student just like them and was studying their writing, and that I was also someone they could come to for help, but that I was not a disciplinarian.

The average age of the 28 first graders in this classroom at the time of this study was 6;6, with ages ranging from 6;0 to 7;1[2]. Many different ethnicities were represented in this classroom, but the majority of students were European American (46.4%). There were no other significant numbers of any one ethnicity. Only 10.7% were African-American, 7.14% were Latino, 7.14% were Korean-American and another 7.14% were Japanese ESL students. The remaining 21.4% was comprised of students from India

[2]All ages are as of November, 1994

(Punjabi), New Zealand, South America, Poland, South Africa and South Korea[3]. In addition, 46% were female and 54% were male.

The Classroom Teacher: Linda

The first day that I visited the classroom, Linda was preparing the class for writing in their daybooks[4]. She was very explicit about the fact that the children should invent spellings for any words they wanted to write but didn't know how to spell, and she even went so far as to model invented spelling for them. She modelled the process of inventing spellings for the phrase "I jumped on the structure," which resulted in the spelling "I jt n da srr" (September 27, 1994). I was somewhat skeptical at first about the effectiveness of actually teaching first graders to invent spellings--doesn't that defeat the purpose? But perhaps it was necessary at first in order to get the children used to the idea of inventing spellings, and for them to really see what was expected from them.

Linda continued to encourage the children to invent spellings whenever possible, although when she saw that a child was really struggling with a word and that trying to invent a spelling was really ineffectual, she wrote the problematic word on a small card for the child to copy. Early in the school year Linda often praised the children in front of the whole class for their invented spellings, including Miranda's invented spelling of "Whiskers" (the name of the classroom guinea pig). Once or twice I also observed her conducting a mini-invented spelling "lesson" by having a child invent a spelling for the class. For example, she helped Jerry invent a spelling for the word "fort" (October 11, 1994). This same day I also heard Linda encourage the class to look back through their daybooks at earlier invented spellings for help if they got stuck. This sort of explicit talk about invented spelling seemed to taper off as the year progressed and more and more of the children were beginning to find invented spelling useful in their writing.

---

[3]The fact that this school was located in close proximity to graduate student family housing helps explain the extreme diversity in this classroom.

[4]Their daybooks were pages of construction paper stapled together like books.

In a recent interview, I spoke with Linda about her own feelings about invented spelling and its role in the writing and reading curriculum. She expressed her feeling that invented spelling is a very useful technique for helping first graders develop their writing skills without getting hung up on the particulars of spelling.

To Linda, encouraging the children to invent spellings does not equate itself with teaching them that spelling is not important. "I want them to talk about it, I don't want them to ignore spelling as an issue, or tell them that it doesn't matter. I find myself saying 'you need to use your invented spelling right now,' or 'I think you can sound it out,' or 'why don't you try a few words and then I'll help you with this word.'"

She feels that "...my obligation is just to keep building on their notion that spelling words is what's required in order to record what it is you want to say, and that there are different kinds of spelling, there's conventional dictionary spelling, we're aiming for that as learners, there are so many tricks to our spelling system...**I just think my job is to build awareness and to give them some tools and give them some practice**."

Although Linda began the year encouraging the children to invent spellings, over the school year she has gradually encouraged the children to concern themselves with spelling correctly. In mid Spring she began assigning spelling words and giving the children a weekly spelling test designed to help them learn a number of things in addition to spelling. The words tend to be sight words which the children may use often in their writing, or encounter in their reading. Each word list contains words that follow a pattern, for example words that end with "un," like "sun" and "fun." When I asked whether she used these spelling tests in order to evaluate the children, she said "Oh, yeah. **It helps me know what they know, the kinds of errors they do**. I have a list of every word they've missed!"

In general, Linda is enthusiastic about the benefits of invented spelling for learning to spell. She believes it is important for the children to construct their own knowledge of the English spelling system, "we used to explicitly teach all those [spelling]

rules, but it's wonderful that kids start making those discoveries [for themselves]" (April 4, 1995).

The Classroom Writing Environment

The class had assigned writing tables which Linda shifted around four or five times throughout the school year, so the children had a relatively consistent group of writing companions for a month or two at a time. There were from four to six children at each table, and the children were not discouraged from talking with each other during writing time, as long as it didn't get too noisy and they were able to get their writing done. They usually wrote in their daybooks twice a week, and were free to choose their own topics for writing. Linda offered help for those who had trouble thinking of a topic for writing.

The Focal Children

Early on in this study it became clear that I would need to focus my attention on a select group of first graders from within this classroom. I consulted with Linda on which students she felt were inventing their own spellings and not relying on help from others (whether those "others" happened to be the teacher, classroom helpers, or peers). I also was interested in studying children who were reflective about their spelling. After observing many of these children at work during their "daybook" writing time, I began to focus on five of the nine students that Linda felt were "writers," and added another child to my focal group whom I felt was also of particular interest. Unfortunately, half-way through the study, one of the focal subjects moved away from the area, so I was not able to follow him all the way through, leaving the total number of subjects at five. Permission to be involved in this study was obtained from parents or guardians for all of the focal children.

Amy is European American, and was 6;2 at the start of this study, and 6;8 when I completed data collection. Amy seems to fit the "good student" stereotype, meaning that she is very aware of what the teacher wants and what will please the teacher. She usually

sits right in front during any activities that the class has on the classroom rug, and raises her hand instead of yelling out answers like some of the other children. And, as you might expect, she was eager to share her work with me.

Anna is also European American, and was 5;10 at the start of this study, and 6;4 by the end of the study. She was the last child I considered including in my focal group, mainly because it was very hard to get a feel for what she was thinking. She seemed very curious of me, never asking me any questions about who I was or what I was doing, but very often staring in my direction. When I first sat at her table and asked her what she had been writing, she didn't respond. But as she wrote more she began talking to me about what she was writing. I got the feeling that she didn't get much opportunity to talk about her writing. There were two Japanese boys who spoke Japanese to each other at her table. They did not speak with others at their table. The other girl at Anna's table always seemed absorbed in what she was doing, and there was no one else at the table with whom Anna could interact. I almost did not include Anna in my focal group because I didn't see much happening in her daybook writing and activity that interested me; she wasn't talking about her writing, often what she wrote was very simplistic, and she used the same forms over and over ("When I was five..."). In short, she did not appear to be reflective about her writing. In retrospect I'm very glad that my instincts told me to include her in the focal group, for she proved my initial impression to be completely inaccurate, as she turned out to be one of the most reflective and advanced spellers.

Jeanie is European American, and was 6;8 at the start of this study, and 7;2 when I completed observation. I became interested in Jeanie because she always seemed to be involved in one writing activity or another, above and beyond classroom activities. Linda had not called my attention to her and did not consider Jeanie to be a "writer," but within a few weeks of observation it became clear that Jeanie really did have some important thoughts about writing, and more importantly, spelling.

Kevin's mother is Indian, and his father is European American. He was 6;6 at the start of this study, and 7;0 at the end. He is a very social child, but gets his work done while socializing. Kevin grabbed my attention rather early in my observation. As I sat at his writing table he reflected on his writing and spelling in numerous ways, and almost literally walked me through his process for inventing spellings for the words "game" and "page." After he had written P-A-J-E directly beneath g-A-M-E, Kevin declared: "They still have, they have, they have, that's that's changed, that's changed, that's changed and that's that's the same and that's the same," indicating that the two words differed only in the first and third letters (October 11, 1994).

Miranda is European American, and was 6;8 at the start of this study, and 7;2 at the end. She received help from a speech teacher regularly, although it was suggested to me that this was more for emotional support than for help with her speech. This is reflected in the fact that she tended to seek Linda's approval for her writing more often than the other focal children. She also was eager to share her writing with me, and often showed me words for which she was especially proud of inventing spellings.

Materials and Procedures

In October 1994 I selected a group of six[5] first graders from a classroom of 28, and collected data on them in two ways: I observed them writing in their daybooks, and also conducted 2 relatively structured interviews with each of them, once in November 1994 and once in April 1995.

The interviews were intended to elicit the children's thoughts as they invented spellings. Since I was primarily interested in the process of inventing spellings, and not just in resultant spellings, I felt I needed to have them do some invented spelling in a situation where they had no outside help, and where we could talk about their process of

[5]Halfway through the study the sixth child moved away from the area, so I was not able to follow him for the duration of the study. For this reason, data from this sixth child are not included

inventing spellings. I also wanted to have each child spell the same set of words so that I could compare their strategies and the results more easily and reliably.

For the interview I sat individually with each child at a table in the school library where we would not be disturbed. Each interview took approximately 15 to 20 minutes, and was conducted early in the school day. I had become a familiar face in the classroom for the children before trying to conduct this interview.

I conducted similar interviews in November and April so that I might be able to take a look at each child's development in regard to choosing strategies for inventing spellings. The second interview differed from the first only in that the words presented were similar enough to the first set of words so as to allow comparison, but different enough so that little or no learning effect occurred between the two interviews.

Target Words: November.

I began with a set of 21 words for the children to work with in an interview I conducted with them in the Fall of 1994. I divided these 21 words among three separate tasks that I wanted the children to work through during the interview. In order to avoid influencing the tasks with my own personal pronunciation of each word, a picture representing the meaning of each word was cut out from a magazine and pasted on an index card. The words were chosen such that (1) they would be easily recognizable from the picture, (2) any first grader would be familiar with them, (3) they were not controversial in any way (e.g. no pictures of cigarettes, etc.), (4) only a few of them could be spelled correctly by sounding them out, and (5) they involved many different letter combinations. (See Appendix A for the complete word list.)

Target Words: April.

For the April interview I selected an additional 21 words that shared similar characteristics with the first set of 21 words used in the November interview. I thought it was necessary to select new words rather than using the same list of words again in order to minimize any learning effect from the November interview on the April interview.

Other than this, the materials for the April interview were the same as those for the November interview. (Refer to Appendices D, E, and F for the word lists from the April interview.)

Interview Tasks.

In both interviews there were three separate tasks for the children. In addition to spelling a number of words themselves (the Spelling Task), I felt it necessary to look at each child's spelling recognition, in order to explore whether the strategies they reported were used for a variety of purposes, including both spelling and word recognition.

Task 1: The Spelling Task.

For the first of the three tasks, the Spelling Task, the child was given a blank index card to write on and a pencil with which to write, in addition to the picture of the word. The child was instructed to write on the blank index card the word that the picture represented. I also asked each child to explain why he or she chose to spell the word the way they did.

Task 2: The Right/Wrong Task.

For the Right/Wrong Task, I presented the children with a correct or incorrect spelling, on an index card, of the word shown in the picture. No additional materials were supplied to the child. I asked the children to indicate whether the word on the card was spelled right or wrong, and also asked them to explain why he or she felt that way (See Appendix B for a complete list of the given spellings).

Task 3: The Choosing Task.

The Choosing Task asked the children to choose the best spelling for the word from a list of four spellings.

In this task I presented the children with four possible spellings of the word in the picture. The four words were printed one above the other on an index card and in all possible orderings so that each ordering was presented to at least one child. This was intended to control for the possibility that the children might always choose a spelling

based on its position in the list of choices, regardless of the spelling itself (See Appendix C for a complete list of the given spellings.).

As with the Right/Wrong Task (Task 2), no additional materials were provided to the child. Each child was asked to point to the correct spelling, and explain why he or she chose that spelling. After the child had selected what he or she thought was the best spelling, I then directed attention to the other spellings on the card and we discussed whether the other spellings may or may not be acceptable spellings of the given word.

Data Collection & Analysis

For this study I collected four different types of data: tape recordings and notes of the children's dialogue in their daybook groups, photocopies of the children's daybooks and other selected writing, tape recordings and notes from the interview with each child, and the children's writing from the interviews.

In regard to analyzing the interview data, I did not look at what the child was actually doing, but rather at what the child reported doing. This may suggest what the child thinks is important or useful in inventing spellings, whether or not the child actually uses that strategy. I also only considered responses where the child led the response, and I ignored responses that I led with questions such as "have you seen the word before?"

A few notes about the symbols I will be using to present the data: phonemes will be represented in IPA form, for example what is often referred to as "long a," as in the word "rain," will be represented with /e/; letter names will be referred to with capital letters, such that when a child is explaining the use of a particular letter in a spelling, I would represent this as "I used an R"; spellings will be represented as the children spelled them, but each letter will be set apart by a hyphen, as in the spelling R-a-I-N; and words will be represented in quotation marks, as in the word "rain."

RESULTS AND DISCUSSION

Strategies

Overall I noticed seven different kinds of strategies that the children reported using. These included: (1) spelling by analogy; (2) remembering one's own spelling of the word; (3) seeing a spelling elsewhere; (4) knowing a spelling or using spelling knowledge specific to that word; (5) focusing on a specific spelling of a word segment, or using spelling rules; (6) sounding out; and (7) using specific letter-sound knowledge. Regardless of whether or not the subjects were actually using the strategies they reported, the data indicates that at the very least these children are becoming more aware of what strategies may be useful or appropriate for spelling.

I have grouped the strategies into three categories which correspond to the linguistic level of the strategy, i.e., does the strategy function at the whole word level, the word segment level, or the letter level?

Whole Word-Based Strategies

Spelling by analogy. Under this strategy I included all instances in which the subjects' compared the target word to the spelling of a familiar word.

The first example may seem obvious to us as adults and experienced spellers, but it clearly demonstrates the simplest case of spelling by analogy. In this instance Amy explains how she knows "cats" is indeed spelled C-A-T-S: "Cats. Yeah [the word is spelled right]. Cause I know how to spell 'cat'. C-A-T" (November 1994, Task 2).

In spelling "pencil", Anna compared the word to another word whose spelling she already knew: "I think I know how to spell it because 'pen' P-E-N, and then I- that's how I know because there's a- a few more letters after that" (November 1994, Task 1).

The compound words with which the children were presented seemed to lend themselves easily to analogies. Several of the children broke the word "butterfly" down into at least one familiar word, "butter" and or "fly". Here Anna explains how she did just this: "Cause I have butter in my house, and I see flies a lot. [Here I asked her how

she knows how to spell those two words] Because, um, 'butter', I just know it could be like that, and 'fly' is the same" (April 1995, Task 1).

Remembering own spelling/Experience spelling the word/Visualizing a word. I broadly defined this strategy as relying on past experience with spelling the target word. One interesting aspect of this strategy, which I've called "visualizing a word" was only reported by one child: Anna. I will explain this more clearly when I discuss Anna's development of this strategy in a later section, but in general this is meant to convey a strategy of picturing the spelling in one's mind.

This strategy essentially involved the child reporting a recent spelling experience with the word. For example, Miranda merely told me "Yeah, 'people.' That's what I spelled yesterday" (November 1994, Task 1). And, in regard to the given spelling m-o-t-h-r for the word "mother," she agreed it was spelled right "because I wrote it down one time. Cause that's how I write it" (April 1995, Task 2).

Anna also employed this strategy a number of times, such as when she explained how she knew "mother" was not spelled m-o-t-h-r: "Because you forgot the E...cause, um, I wrote "mother" a lot. So, like my mother" (April 1995, Task 2).

Seeing a spelling elsewhere/Learning a spelling in class. This strategy is meant to include any suggestion by the children that they have seen the word before in places such as books, or on a classroom spelling list.

When reporting using this strategy the children also frequently reported where they had seen the word spelled. At one extreme we have Anna, who could not remember where she had seen the word "towel" before, but knew she knew the right spelling because she had in fact seen it spelled before: "Cause I've seen it. I forget where, it's been a long time, I've just seen it" (April 1995, Task 3). I wondered to myself as she explained this what a long time is for someone who is only six years old. On the other hand, if Anna did remember where she had seen a word she reported that without

hesitation. In this case, in regard to the word "juice," she told me: "I saw it on the orange juice container when my mom makes it" (April 1995, Task 3).

Knowing a spelling/Using word-specific spelling knowledge. This strategy encompasses any explanations that the child already knew how to spell the word, or that he or she knew some specific part of the spelling of the word. This differs from the Spelling by Analogy strategy in that this knowledge is particular to the given word, and is not generalized knowledge based on knowledge about spelling in general.

Take, for example, Amy's explanation for why she thought that the word "little" was not spelled l-i-t-l: "Because, I...heard that before the T there's two L's, and then T. That's how I know" (November 1994, Task 2). In this instance Amy did not even consider the fact that when she had sounded out this spelling it did sound like the word "little." Instead, she relied on this bit of word-specific knowledge (which was in fact either incorrect from the start, or she had remembered it incorrectly).

Miranda also provides us with an example of this strategy in explaining her spelling of the word "elephant," which she spelled E-L-F-I-N-T: "Elephant. So it starts with an E. Sounds like it's an A but it's an E" (November 1994, Task 1).

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. This strategy includes explanations that suggest a certain word segment should always be spelled a certain way, or explanations that rely on spelling rules to justify a spelling.

For example, Jeanie expressed her understanding of the rule for forming plurals, and Kevin relied on his personal understanding of the function of silent E in spelling.

Jeanie was able to produce the correct spelling of the word "presents" based on her knowledge of plurals. When I asked her how she knew how to spell the word, she focused on how she was able to express that fact that there were several presents in the picture: "well, I knew that there's tons of presents [in the picture] so there would be a S at the end" (April 1995, Task 1).

Kevin also focused on spelling rules when he felt it was appropriate to do so. Whenever he encountered a long vowel in a word, or an E on the end of a word, Kevin started to think about how silent E functions in relation to long vowels. He continually demonstrated throughout the study that he believed that long vowels must be represented by a silent E on the end of the word, and that any E on the end of a word indicated that the vowel within the word must be a long vowel.

Letter-Based Strategies

Sounding out. This strategy is very familiar to anyone who has watched children spell, or who has tried to help them spell. This is perhaps the most basic strategy; it is one in which the child attempts to map a grapheme (letter) onto each phoneme (sound) in a word.

Each child involved in this study sounded many words out, from Jeanie who sounded out words like "shoes" and "pumpkin" ("Because I heard the S-H 'sh' and the 'oes,'" "I heard the P and I heard the U and I heard the C the E and the N") to Anna who figured out there were two E's in sleeping because she sounded it out ("Because I knew cause I sounded it out to myself 'ee, ee,' and I knew it was like two E's").

Specific letter-sound knowledge. The children often brought knowledge to the spelling tasks about particular letter sounds and how they may be represented orthographically. This strategy is meant to include any instances of this in the children's explanations for their spellings. This strategy differs from sounding out in that it employs knowledge that is not of a phonetic nature (e.g., PH for /f/).

Take, for example, the fact that several of the children employed knowledge about how /f/ can be represented by the letters P-H. Jeanie explained that Linda taught her that "...P-H can make the letter F," and Kevin's spelling t-e-l-P-h-o-n for the word "telephone" also reflected this knowledge (April 1995, Task 1).

Overall Strategy Development

Each child claimed to have used a variety of these strategies, however during the April interview the children reported using a wider range of strategies than during the November interview (Refer to Table 1). Regardless of whether or not the subjects were actually using the strategies they reported, the data indicates that at the very least these children are becoming more aware of what strategies may be useful or appropriate for spelling. This suggests that these children are constantly revising and adding to the type of knowledge they find applicable to spelling.

Whole Word-Based Strategies

Spelling by analogy. This was a common strategy for the children in both November (.128)[6] and April (.098). This may be so because they have had enough experience with seeing words in print to be able to compare spellings of words and apply what they have observed to current experience.

Remembering own spelling/Experience spelling the word/Visualizing a word. This strategy was quite uncommon in the November interviews (.026), but was more important to the children in the April interviews (.125). This is understandable if we consider that over the five months between the two interviews the children have had many more opportunities to practice their writing and have gotten more experienced writing and spelling for themselves.

Seeing a spelling elsewhere/Learning a spelling in class. This strategy was not reported in the November interviews, but was important to the children in the April interviews (.125). By the time of the April interview these children have added to their experience by seeing a greater number of words in print, many of which may have coincided with the words on the list of target words.

---

[6]Numbers in parentheses indicate the percent the strategy was reported by all children, as reported in Table 1.

Knowing a spelling/Using word-specific spelling knowledge. This strategy was fairly common in the November interviews (.205), but was not relied upon as much by the children in the April interviews (.054), probably because the children had begun reporting/using a wider array of strategies. Perhaps in the five months between the interviews the children have become more aware of how they spell words and can be more specific about what they know rather than just reporting knowing a spelling.

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. This strategy was uncommon in the November interviews (.077), and became slightly more important to the children overall in the April interviews (.143). However, it may be more meaningful in this instance to look at how the children used this strategy individually. In November only two of the children, Jeanie and Kevin, reported using any sort of rule-based strategy. Yet in April, each of the children reported using this strategy at least once, although Jeanie and Kevin continued to use this strategy more than the others, and usually in regard to one particular sound segment or spelling rule. The growth of awareness of spelling rules and spellings for word segments may have occurred as the children learned more about spelling as a regulated system.

Letter-Based Strategies

Sounding out. This is perhaps the most basic strategy, it is one in which the child attempts to map a letter onto each sound in a word. This strategy was the most common in both November (.564), and April (.384). It is not surprising that as the children become more knowledgeable about the English spelling system they will tend to rely less on sounding out words, since in English words are very rarely spelled the way they actually sound. When all other strategies failed, the children resorted to sounding words, or parts of words, out.

Specific letter-sound knowledge. This strategy was nonexistent in the November interviews, but was reported often by the children in the April interviews (.071). As was

the case for spelling rules, the children also may have gained more letter-sound knowledge as they learned more about the spelling system in the classroom.

Differences in Strategy Use Across Tasks

As I expressed earlier when discussing the design of this study, the purpose for conducting several different tasks during the interview was to assess whether the strategies that the children reported were used in a variety of contexts, or whether the strategies reported were restricted to one type of task. As you can see in Table 2, the strategies were distributed evenly across all tasks.

Individual Strategy Development

Amy

Amy relied on only three different strategies during the November interview: Spelling by Analogy, Knowing the Spelling of the Target Word/Knowledge Specific to the Target Word, and Sounding Out. By April, however, she had stopped reporting Knowing as a strategy and began explaining her spellings in terms of Specific Spelling of a Word Segment/Spelling Rules and Specific Letter-Sound Knowledge instead. This implies that during the five months between the interviews she has gained more insight into her own spelling processes, and has become better able to express her thinking in regard to spelling (Refer to Tables 2 & 3).

Whole Word-Based Strategies

Spelling by analogy. We've already seen Amy's use of the analogy strategy, during the November interview, in her spelling of the word "cats" by relating it to the root word "cat," which she knew how to spell. This is a very basic analogy, but by the time I interviewed her again in April, she had become much more sophisticated in using this strategy.

Amy brought a very sophisticated analogy to her spelling of the word "knife." She must have been reading some "knock-knock" jokes recently, for she compared the initial sound of the word "knife" to the initial sounds in the phrase "knock-knock," which

she happened to know how to spell correctly. "Well I know 'knock-knock' has K in front of it, so 'knife' must have a K" (April 1995, Task 1). Because no other words in the April list of words began with /n/, it isn't clear whether Amy had complete and accurate knowledge about when /n/ is represented by K-N, or whether she lucked out in this case.

Remembering own spelling/Experience spelling the word/Visualizing a word., Seeing a spelling elsewhere/Learning a spelling in class. Amy did not report using either of these two strategies during either interview.

Knowing a spelling/Using word-specific spelling knowledge. As seen earlier, Amy employed particular knowledge about the spelling of the word "little" when trying to spell it in the November interview. She explained to me that she had heard somewhere that there are two L's before the T in the word "little," therefore the spelling that I had presented her with, l-i-t-l, must be wrong (November 1994, Task 2). Based only on this knowledge about the spelling of the word, and ignoring the fact that the spelling given did sound like the target word when she read it aloud, Amy made her decision that the word was spelled wrong.

In April Amy seemed to use more word specific spelling knowledge than she had in the November interview. She reflected on knowledge about the spellings of the words "telephone," "eggs," and "smile." Based on my observation from earlier in the interview, where Amy had struggled in deciding whether the /f/ sound in the word "knife" was represented by an F or a P-H, I asked her why she spelled the word "telephone" (which she spelled T-e-l-l-e-p-h-o-n) with a P-H rather than an F. Amy explained "because it sounded like that, I know how to spell it a little bit" (April 1995, Task 1). When it came to deciding whether e-g-z was the correct spelling of the word "eggs," Amy knew right away that the given spelling was wrong. She told me "you put a Z instead of another G. E-G-G-S. You gotta learn how to spell" (April 1995, Task 2). In regard to the word "smile," she selected the correct spelling from the four choices and explained to me: "I knew this one [s-m-i-l-e] is right. It looks like it and I can read it good. This one

[s-m-i-e-l] looks sorta like 'smi--ell' It doesn't have the E at the end so it says 'ell,' 'smi--ell'" (April 1995, Task 3).

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. Amy did not seem to base many of her spellings on spelling rules. She did not report or suggest having used rules in order to spell words in the November interview at all.

In April I found that Amy seemed to have employed a rule-based strategy in spelling the morpheme "ing," however she did not reflect on this at all. When I asked her how she spelled "sleeping" she merely said "[I] sounded out 'sleep' but I knew 'ing'" (April 1995, Task 1).

Letter-Based Strategies

Sounding out. In November Amy used this strategy in figuring out how to spell "pencil," which she spelled P-a-n-S-l: "I figured it out because I said it really slowly" (November 1994, Task 1).

She follows through on this type of reasoning with her decision that spellings of "stamp" and "dinosaur" were correct (although they were written s-t-a-p and d-i-n-a-s-o-r): "Because it sounds like it, stamp [drawn out]", and "Because 'dine' 'na' 'sore'" (November 1994, Task 2).

In April Amy reported having sounded out the spellings of the words "mittens," "popsicle," "clap," "pumpkin," "presents," as well as parts of the words "butterfly" and "sleeping" (April 1995, Task 1). She tended to merely say that she had sounded words out, but at one point she insisted "[I] sounded it out. That's probably gonna be the answer for all of em" (April 1995, Task 1). For the words "butterfly" and "sleeping," which she spelled B-a-d-e-r-f-l-y and S-e-l-e-p-i-n-g, respectively, she told me that "well I just

sounded out this ['butter'] but I know how to spell 'fly[7],'" and "[I] sounded out 'sleep' but I knew 'ing'[8]."

Specific letter-sound knowledge. During the November interview Amy did not report having used any knowledge particular to the various sounds different individual, or combinations of, letters can make. However, by the time of the April interview, she was quite aware of this as a good strategy for spelling.

In April it was clear that Amy was pretty well skilled at determining when PH is more appropriate than F in spelling certain words, however this knowledge did confuse her at one point, when she was faced with the word "knife." She had to stop and think whether the F sound in "knife" was represented with P-H or simply with an F. In the end she chose the right symbol, but she had to think hard about it. When it came to spelling "telephone," however, she knew instantly that P-H was more appropriate than F (April 1995, Task 1).

Amy also reported knowing about silent G-H combinations, as in the word "light." She made two passes at the spelling of "light," explaining why she had second thoughts about her spelling:

Amy: Well, these [G and H] were silent and I didn't know that before and so I crossed it out.

Cathy: And how did you know that those [G and H] are there? How did you know that they're supposed to be there?

Amy: Because the I says /aɪ/ instead of /I/.

Cathy: Uh huh, and how come you put all those extra letters there? You just know somehow that they're supposed to be there? Do you remember how you know?

---

[7]This spelling was also classified as a Spelling by Analogy strategy because of her analogy to the word "fly."

[8]This spelling was also classified as a Specific Spelling of a Word Segment/Spelling Rules strategy because of her knowledge of the spelling of the morpheme "ing."

Amy: I know, I just wrote it.

(April 1995, Task 1).

Anna

Just like Amy, in November Anna reported having used only three strategies: Spelling by Analogy, Knowing the Spelling of the Target Word/Knowledge Specific to the Target Word, and Sounding Out. Unlike Amy, however, Anna did continue to report a Knowing strategy through the April interview, although she did so much less than in November. In addition to the original three strategies she reported, in April Anna also reported Remembering own Spelling/Experience Spelling the Word/Visualizing a Word, Seeing a Spelling Elsewhere/Learning a Spelling in Class, and Specific Spelling of a Word Segment/Spelling Rules (Refer to Tables 2 & 3).

Whole Word-Based Strategies

Spelling by analogy. In the November Choosing Task, when faced with the word "playing," Anna chose the correct spelling and explained her reasoning as follows:

Anna: Playing, this one [pointing to the spelling "playing"].

Cathy: That one? You sound pretty sure about that one

Anna: Yeah.

Cathy: How do you know that?

Anna: Because it's P-L-A-Y and I already know how to spell that.

(November 1994, Task 3).

In early daybook writings, I had noticed that Anna wrote p-a-l-y for the word "play", as seen in her spellings p-a-l-y-e-d and p-a-l-y-i-n-g. It was only at some time immediately preceding the November interview, that she finally figured out that "play" is not spelled p-a-l-y. In this interview she relied on her recently acquired knowledge of how to spell "play" in order to select the correct spelling.

Anna seemed to continue using basic analogies in order to help her spell words in April. To explain how she came up with the correct spelling for the word "butterfly,"

Anna told me "'cause I have butter in my house, and I see flies a lot," and when I asked her how she knew how to spell those two words ["butter" and "fly"] she replied, "because, um, 'butter', I just know it could be like that, and 'fly' is the same" (April 1995, Task 1).

Remembering own spelling/Experience spelling the word/Visualizing a word.

Anna did not use this strategy at all during the November interview, however by the time of the April interview she had begun using this strategy extensively.

Here Anna explains her experience with the word "light":

Anna: That's easy to spell. For some people it's hard but it's easy for me.

Cathy: How come it's so easy?

Anna: Cause, um, I always spell it a lot in my house.

Cathy: Ok, so you do a lot of writing at home, huh?

Anna: Not as much as I do writing in my homework [laughs].

(April 1995, Task 1).

Anna is fortunate to live in an environment in which she is encouraged to write often, and this experience clearly can contribute directly to her school performance. Perhaps it is her home environment that has encouraged her to think in terms of picturing spellings when she sees objects, as she explained she often did when spelling words. Take, for example, how she knew how to spell "smile": "I saw it when--when my mom smiles I just think that it's like that" (April 1995, Task 3). It's not yet clear here what she is implying, but it may become more clear if we look at her comments about spelling "train".

Anna: Cause I keep on seeing trains on TV and I may see em when I'm up in the mountains in Yosemite.

Cathy: Do you see the word or just the train?

Anna: The word. When I see a train I just think of the word.

(April 1995, Task 2).

I found this very interesting, and perhaps this is the most reflective strategy I have heard from all of the children combined. Indeed, Anna appears to be the most "advanced" speller in the group of five focal children I studied, so this is not surprising. However, it is unclear if she is a more advanced and reflective speller because she can use this strategy effectively, or if she can use this strategy so effectively because she is a more advanced and reflective speller. On the other hand, she may not even be picturing the words in her head at all (how could we ever test that?), perhaps this is just her way of saying "I've spelled that word before," or "I already know how to spell that."

Seeing a spelling elsewhere/Learning a spelling in class. As with the previous strategy, Anna did not report using this particular strategy at all during the November interview, but reported having used it more often in the April interview.

Anna seems to be very aware of environmental print, and during the April interview she often reported having seen many of the target words before. She reported having seen spellings for the words "mittens," "telephone," "cheese," "towel," "hamburger," and "knife" in a variety of environments. For the word "mittens" she reported having seen it in a book: "because...there's a book with the word 'mittens'" (April 1995, Task 1). For spelling "telephone" she reflected on the fact that she knew how to spell "phone" and figured out "telephone" from there. I asked her how she knew how to spell "phone" and she told me "cause it has 'phone' by my phone," meaning that the word "phone" is written somewhere near her phone. She added that "I always go by there [by her telephone]," suggesting that whenever she goes near the phone she sees the word spelled out (April 1995, Task 1). In deciding on the correct spelling for "cheese," Anna explained how she made her choice: "Because I knew it was C-H-E-E-S-E because I saw it on the cheese packages" (April 1995, Task 3). She also reflected on having seen the word "towel" spelled before, however she forgot where she had seen it, explaining "cause I've seen it. I forget where, it's been a long time, I've just seen it" (April 1995, Task 3). For the word "hamburger" she remembered having been out to eat recently,

where she saw the word in print: "cause I went to Sizzler, they had hamburgers, and I saw it [the word 'hamburger']" (April 1995, Task 3). For "juice" she remembered having seen the word written out on the orange juice can: "I saw it on the orange juice container when my mom makes it" (April 1995, Task 3). And for the word "knife," for which she claimed to know two correct spellings, she reasoned in this way: "I knew how to spell it like this [K-n-i-f-e]...And I know another way...N-I-F-E...There're two ways." At this point I asked her how she would write the word in her daybook, and she explained "I bet I would do this way [n-i-f-e]...I would use this one [n-i-f-e]." I then asked her how she knew there were two ways to spell this word and she told me "because I saw them...I saw people spelling it [K-n-i-f-e], like my mom." About the n-i-f-e she explained "Like, I was just saw it [n-i-f-e], I just knew" (April 1995, Task 1). It's interesting that these two different spellings of the same word do not strike Anna as contradictory, but that one person (her mother) might spell it different from another (herself), and that seems to be okay with Anna. Clearly Anna spends a lot of time noticing environmental print and reflecting on the spellings she sees.

Knowing a spelling Using word-specific spelling knowledge. Anna used this strategy in her explanation for choosing the correct spelling of the word "night" from a list of four possible spellings, as seen here:

Anna: This one [choosing n-i-g-h-t].

Cathy: The last one? How come?

Anna: I know because it has the H and these [the other spellings on the card] don't.

Cathy: Oh, you know it's supposed to have a H, huh?

Anna: Yeah.

(November 1994, Task 3).

Anna also reported this strategy in April, when she explained why she felt my spelling e-g-z for the word "eggs" was wrong: "Because...you see it would be E-G-G-S and I know how to spell it like that" (April 1995, Task 2).

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. In November Anna seemed to think of spelling words as a whole rather than thinking of spelling segments of words. This is reflected by the fact that she did not seem to apply this strategy to any of her spellings. By April, however, she has begun to see the value of this strategy and has started to use it.

When I asked Anna how she knew to spell the last part of the word "clapped" she explained: "well cause, my friend's dad's name's Ed, I already know how to spell it ['Ed'], and I also knew-- learned how to spell it ['-ed'] from a [television] show. I forget the name of it, but I always watch it" (April 1995, Task 1).

Anna has also started reflecting on her use of "-ing," as seen in the following example about her spelling of the word "sleeping": "my teacher always spells it like that and I always hear a spelling 'ing' and I always write it on my spelling test" (April 1995, Task 1).

Letter-Based Strategies

Sounding out. Anna never seemed to rely on the sounding out strategy to figure out spellings, perhaps because she already knew quite a bit about spelling in general. She did, however, use this strategy in November in order to spell "elephant," which she spelled

e-L-L-F-i-T:

Anna: [As she writes:] I'm trying to sound it [the word "elephant"] out.

Anna: I tried to sound that [the word "elephant"] out.

Cathy: Yeah, that's a hard word, a big word.

Anna: And I was trying to sound that out.

Cathy: You did pretty good.

Anna: Thanks.

(November 1994, Task 1).

Again in April, as in November, Anna didn't do very much sounding out, but she found herself having to when inventing the spelling P-o-p-s-i-c-l-e-s for the word "popsicle": "Popsic- Popsicles? Phew. I sounded it out" (April 1995, Task 1).

Specific letter-sound knowledge. At no point did Anna mention having used any knowledge particular to letter sounds. This may be because she seems to approach words as whole units, and is able to spell most of them without much thought. In the spellings which she had sounded out, "elephant" and "popsicle," she did not seem to employ any specific letter-sound knowledge. She did not seem to consider that the /f/ sound in "elephant" could in fact be represented by a PH. She did, however, spell "popsicle" with a C to represent the /k/ sound, although when I asked her about it she told me "I've spelled that before." This suggests that the knowledge that there is a C and not a K in the word "popsicle" is specific to this particular word and does not necessarily mean that she is aware that C can make the /k/ sound in other words.

Jeanie

Jeanie relied on three strategies during the November interview, as did Amy and Anna as I discussed earlier. Jeanie, however, relied on one different strategy than did Amy and Anna: in addition to Spelling by Analogy and Sounding Out, Jeanie also relied on Specific Spelling of a Word Segment/Spelling Rules. Jeanie continued to use all three strategies through the April interview, at about the same rate. She added only one more strategy to her repertoire during the April interview: Specific Letter-Sound Knowledge. This is probably a reflection of direct instruction in the classroom (Refer to Tables 2 & 3).

Whole Word-Based Strategies

Spelling by analogy. Using analogies to invent spellings was a consistent strategy for Jeanie throughout the study. Jeanie presents us with an example of spelling by analogy where she seems to have sounded the word out, however, when she explains how she came up with the spelling, she compares her spelling of "bicycle" (B-u-s k-o-l-l) to the spelling of the related, but differently sounding, word "bike": "Because it had...'bike' 'sss' and then 'kull'" (November 1994, Task 1). Judging from her spelling B-u-s k-o-l-l we might have expected her to compare the sounds of "bicycle" to the sounds of the word "bus" rather than to "bike," but because she did not, this suggests that she was relying on more than just a sounding out strategy, in this instance.

Somewhere in the past few months Jeanie had caught on to the concept of contractions, although it's clear that she does not yet understand what they are. However, when faced with spelling the word "clapped," during the April interview, Jeanie related this word to one with which she was familiar, the word "can't." She recognized the /t/ sound at the end of both words, and, perhaps realizing that in both cases the /t/ follows another consonant, she reasoned that the apostrophe must be there to keep them separate, so she stuck it between the final two letters, the P and T of her spelling c-l-a-p-'-t. To me she explained, "I know the word 'can't' has a T and they put that little thing there." When I asked her what that "little thing" meant, she told me that she did not know (April 1995, Task 1).

Again Jeanie used this analogy strategy when deciding whether or not the word "chair" was really spelled c-h-a-r-e. In this case she reasoned "you should take away the E. C-H-A-R. Cause [if you spelled it C-H-A-R-E] then it would be kind of like 'char' cause 'are' is spelled A-R-E" (April 1995, Task 2). Once Jeanie learns about silent E, she will realize that the type of reasoning seen in this example is in direct conflict with silent E, and she will have to decide for herself which strategy should prevail in instances like this one.

Remembering own spelling/Experience spelling the word/Visualizing a word, Seeing a spelling elsewhere/Learning a spelling in class, Knowing a spelling/Using word-specific spelling knowledge. Jeanie never reflected verbally on these other whole word-based strategies.

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. In November, Jeanie spontaneously explained the rule for forming plurals to me when I asked her how she knew how to spell "cats": "Cause you put a S on the end. I know how to spell cat C-A-T, then you put an S on the end for things and it will be 'cats', or, like if you said 'dog', you would put an S on the end for 'dogs'. (November 1994, Task 2).

It's important to note that Jeanie seemed to use this rule correctly, instead of over-generalizing it. This is clear from her spelling of the plural noun "watches," which she spelled W-o-t-h-e-s. Had she believed that her rule about forming plurals as stated above was used in every case of forming plurals, she would no doubt have spelled the word "watches" as W-o-t-h-s, by simply adding an S to the end of the word "watch," which she spelled W-o-t-h (November 1994, Task 1).

As in the November interview, in April Jeanie defined pluralization when we discussed the word "presents." She explained "well, I knew that there's tons of presents [in the picture] so there would be a S at the end." (April 1995, Task 1).

During the April interview I found Jeanie relying on a particular spelling, e-l, to indicate a syllabic /l/ at the end of words. This was done fairly consistently, for "bottle" (which she claimed should be spelled b-o-t-t-e-l), "towel" (for which she chose the spelling t-o-w-e-l, which happened to be correct), and "smile" (for which she chose the spelling s-m-i-e-l) (April 1995, Tasks 2&3). When I interviewed her in November she was spelling this same sound consistently as o-l-l, as in her spellings P-O-S-O-l-l ("pencil"), P-e-P-o-l-l ("people"), and B-u-s k-o-l-l ("bicycle"). One April spelling with a syllabic /l/ was similar to the way she had been spelling it in November, however. She

spelled "popsicle" with an o-l on the end: p-o-p-s-u-c-o-l, where I would have expected her to write p-o-p-s-u-c-e-l. Perhaps the way the tasks were set up could have influenced her spelling here, for the word "popsicle" was the only one with a syllabic /l/ in the April interview that she was asked to spell. After she spelled out p-p-s-u-c-o-l, the other words ("bottle", "towel", "smile") were presented to her with a variety of spellings, none of which included her usual November o-l type ending. Perhaps she caught on to this and exchanged her o-l form for a similar form, in this case e-l. However, it remains unclear, because the first syllabic /l/ word she encountered after spelling "popsicle" was "bottle," which I presented in Task 2, spelled correctly. She could easily have claimed the given spelling was wrong in light of the way she spelled "popsicle," explaining it should be spelled b-o-t-t-o-l instead of her claim that it should be spelled b-o-t-t-e-l. No matter what the circumstances, however, her spelling choices were still relatively consistent with each other.

Letter-Based Strategies

Sounding out. In November Jeanie used a sounding out strategy in order to explain why she selected b-r-u-t-h-e-r as the correct spelling for "brother" over the other three choices (b-r-o-t-h-e-r, b-r-o-t-h-r, and b-u-t-h-e-r): "Because I heard a R and right here, it had a R and right here it had a R, and right- well, all of these had R's, but...I also heard a...U sound" (November 1994, Task 3). Only one spelling matched with the two sounds that Jeanie heard in the word "brother," thus b-r-u-t-h-e-r was the clear choice.

Again in April Jeanie sounded several words out, including "lamp" (spelling it l-a-m-p), "shoes" (spelling it s-h-o-s), and "pumpkin" (spelling it p-u-c-e-n). She explained her spellings for each word respectively as follows:

> Because I heard a L at the beginning, then a A, then a M, then a P.
>
> Because I heard the S-H, "sh," and the "oes."
>
> I heard the P and I heard the "uh" and I heard the C the E and the N.

(April 1995, Task 1).

Specific letter-sound knowledge. Jeanie did not suggest that she brought any knowledge about particular letter sounds to her spelling in the November interview, although this changed by the time of the April interview.

In April Jeanie reported knowing that sometimes P-H can make an /f/ sound, as seen when we discussed her spelling of the word "phone" (as part of the target word "telephone"): "cause I knew it started with a P-H. Um, Linda [her teacher], once she told us that P-H can make the letter F" (April 1995, Task 1).

Jeanie also reported knowing that the /s/ sound can sometimes be represented by a C in English spelling. She chose the spelling j-u-c-e for the word "juice," and explained "cause sometimes the C can make an S" (April 1995, Task 3).

Kevin

Kevin also reported using just three strategies during the November interview: Knowing the Spelling of the Target Word/Knowledge Specific to the Target Word, Specific Spelling of a Word Segment/Spelling Rules and Sounding Out. In April he also began reporting having used Seeing a Spelling Elsewhere/Learning a Spelling in Class, and Specific Letter-Sound Knowledge. These additional strategies may very well have come about because of direct instruction in the classroom (Refer to Tables 2 & 3).

Whole Word-Based Strategies

Spelling by analogy, Remembering own spelling/Experience spelling the word/Visualizing a word. Not once during the entire course of this study did Kevin report having spelled a word by making an analogy with a similar sounding word. Nor did Kevin reflect on any prior experience with spelling the target words.

Seeing a spelling elsewhere/Learning a spelling in class. Kevin did not report having seen any of the target words before, until the April interview. In explaining how he knew how to spell "butterfly" Kevin could not pin down one place where he had seen the word, explaining "I just read it everywhere." (April 1995, Task 1). On the other

hand, for the word "shoes" he remembered that "I looked at a store," meaning that he saw the word in a shoe store (April 1995, Task 1).

Knowing a spelling/Using word-specific spelling knowledge. Kevin had very similar knowledge to that used by Anna in her explanation for choosing a particular spelling of the November target word "night." In Kevin's case, however, instead of focusing on the H in the word, as Anna did, he focused on the G in it, and believed there was no H. He first selected the spelling n-i-g-h-t and later changed his mind to the spelling n-i-g-t as seen here[9]:

Kevin: Cause it- it [the spelling n-i-g-h-t] had a G in it.

Cathy: You know it has a G in it? How do you know it has a G in it?

Kevin: I know- "niightt" [sounding it out]--Oh this one [the spelling n-i-g-t] is, really, really, cause there's no H.

Cathy: There's no H? How do you know there's a G?

Kevin: Cause.

[I point to n-i-t, asking if it works]

Kevin: There's supposed to be a G right there.

(November 1994, Task 3).

In April Kevin again reported using this strategy when he selected what he believed was the correct spelling of the word "juice" from a list of four possible spellings (it happened to be the correct spelling):

Kevin: Cause, it has, most of 'em don't have a C.

Cathy: This one [j-u-c-e] has a C. How come this one's [j-u-i-c-e] better than this one [j-u-c-e]?

Kevin: Cause it [j-u-c-e] doesn't have a I.

Cathy: How do you know it's supposed to have a C and a I?

---

[9]Even later he decided that none of the given spellings were really right, and that he would spell the word "night" N-I-G-T-E.

Kevin: Cause that's how it makes "juice."

(April 1995, Task 3).

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. From the beginning of this study I watched as Kevin continued to demonstrate his belief that long vowels must be represented by a silent E, and that an E on the end of a word always indicates a long vowel. Through my observation of Kevin's daybook writing I have gained much insight into his understanding of silent E. In one particular daybook writing event I watched him invent a spelling for the phrase "game page". I am sure that he was inventing this spelling because he had originally asked me how to spell it, and I suggested he give it a try himself. The words seemed to offer him little difficulty, and he wrote this phrase as g-A-M-E P-A-J-E. Because of his consistent use of the silent E in these two words, we can assume that the E is not a random letter, but rather serves a very specific purpose, to elongate the vowel. Bearing this in mind, it is therefore not surprising that in his invented spellings of "have" and "love", Kevin left off the silent E because the vowel is not long. He spelled these words h-a-v, and l-u-o-v. Kevin also worked the silent E into more complicated words that involved more than one vowel and syllable. In spelling the word "crayon," Kevin wrote c-r-a-o-n-e, with the E serving to elongate the initial vowel (the A) (October 1994).

It became clear to me in November that this was a conscious strategy on Kevin's part when we talked about how "night" was spelled during the Choosing Task. He had previously chosen n-i-g-h-t as the correct spelling, but then changed his mind to n-i-g-t because he felt there was no H in the word. In this example I am directing Kevin's attention to yet another spelling, this one spelled n-i-t-e:

Cathy: How 'bout the last one [n-i-t-e], does that one work? Even though you know there's no G [in this spelling]?

Kevin: There's supposed to be a G right there [after the I]. Then there's a E [on the end of the word].

Cathy: You think there's an E on the end? So if you wrote it how would you spell it?

Kevin: I'll spell it N-I-G-T, um -E.

(November 1994, Task 3).

Toward the end of the interview we talked about "night" further, when Kevin wanted to know what the "right" spellings were:

Kevin: I thought it was this one [n-i-g-t]. Is that [n-i-g-h-t] the first one I picked?...But I thought it had a E in it.

Cathy: Yeah, cause, how come? Why did you think there would be an E?

Kevin: Cause there was a I cause it said /aɪ/ so they put a, shoulda put it, so there would be a E there.

(November 1994, Task 3).

At this point what I had suspected all along became crystal clear, as Kevin explained to me, in his own words, that silent E on the end of the word makes the vowel long.

Knowing this, we can look at what he had to say about the spelling d-i-n-a-s-o-r for the word "dinosaur" and understand a little better what he was thinking:

Cathy: And how come you think it's [the spelling d-i-n-a-s-o-r] wrong?

Kevin: Cause there's a I.

(November 1994, Task 2).

Although Kevin later changed his mind, and decided "dinosaur" really was spelled d-i-n-a-s-o-r, let's take a look at what he meant when he said that the spelling was wrong "cause there's an I." Knowing that Kevin relies on silent E to indicate that the initial vowel is a long vowel, the absence of the silent E indicates to him that the I in the spelling d-i-n-a-s-o-r is short. Therefore, when he read d-i-n-a-s-o-r to himself, it must

have sounded strange to him, since he read the I as a short vowel, and therefore decided it was spelled wrong because it didn't sound like it should. When Kevin changed his mind and said that d-i-n-a-s-o-r was spelled correctly, I'm not sure that he really believed that, because he essentially tricked himself into it. Take a look at the logic of our discussion when I asked him how he would spell "dinosaur," after he declared the spelling d-i-n-a-s-o-r was wrong because of the I:

Kevin: D-I-N-A-S-O-R

Cathy: Well that's how it's spelled there [on the card], and you think it's right or wrong?

Kevin: Right.

(November 1994, Task 2).

He easily could have come up with this spelling because it had been suggested by me in the form of the spelling on the card, about which we had just been talking. However, since his spelling matched the spelling on the card, of course he would claim the spelling on the card was right! What's important about this event, however, is his reflection on the long vowel/silent E rule.

By the time of the April interview, Kevin still had not worked out the kinks in his silent E rule. His procedure for spelling "light" reflects the struggle he is having trying to figure out the finer details of this rule. He first spelled it correctly, as l-i-g-h-t, which he had probably memorized or seen somewhere frequently. However, he added an E to the end of the word as an afterthought. Curious, I asked him why, to which he replied "cause the I is /aɪ/, it [the E] makes the I say /aɪ/" (April 1995, Task 1). He didn't seem to struggle with the rule in the other tasks, he just applied it across the board, as seen here in regard to the given spelling b-o-t-t-l-e for the word "bottle": "Take off the E...cause it makes the O do /o/"; and the spelling t-r-a-i-n for the word "train": "there's supposed to be E...cause it would make the A do A" (April 1995, Tasks 2&3).

Letter-Based Strategies

Sounding out. During the November interview Kevin didn't mention anything about sounding words out until I asked him what he was generally thinking about when he was spelling the words. Looking back I realize that that was a pretty complicated question to be asking a first grader, but Kevin didn't have any problem answering it. He just said "Mmm...just think- thinking of the sound [of the words]" (November 1994).

By the time of the April interview, however, Kevin had become more explicit about the fact that he was sounding out the words, although he never said anything more than "I sounded it out." Kevin sounded out "clapped," "knife," and "presents," which he spelled K-a-P-e-d, n-i-f, and p-r-e-s-i-n-t-s, respectively. In each case he merely stated "[I] sounded it out" (April 1995, Task 1).

Specific letter-sound knowledge. Kevin did not report any specific letter-sound knowledge during the November interview.

As with Jeanie and Amy, in April Kevin also reflected on the fact that P-H can be used to represent /f/. Kevin's spelling t-e-l-P-h-o-n for the word "telephone" reflected this knowledge. However, this was the closest he ever came to reporting having used letter-sound knowledge to help him with a spelling.

Miranda

As with all of the other subjects, Miranda also relied on just three strategies during the November interview[10]. She reported having used Remembering own Spelling Experience Spelling the Word Visualizing a Word, Knowing the Spelling of the Target Word Knowledge Specific to the Target Word, and Sounding Out. In April she no longer reported Knowing the Spelling of the Target Word Knowledge Specific to the Target Word, but began reporting Spelling by Analogy, Seeing a Spelling Elsewhere Learning a Spelling in Class, and Specific Spelling of a Word

[10] A coincidence, no doubt

Segment/Spelling Rules. Like all of the other children who stopped reporting Knowing the Spelling of the Target Word/Knowledge Specific to the Target Word as a strategy, Miranda has also probably become more reflective about her spelling in the past five months and has thus become better able to attribute her reasoning to strategies more concrete than "Knowing" (Refer to Tables 2 & 3).

Whole Word-Based Strategies

Spelling by analogy. Miranda did not report having used any analogies when spelling the target words during the November interview, although by the time of the April interview she had begun to see the usefulness of such a strategy for inventing spellings.

When asked why she selected the spelling h-a-m-b-u-r-g-e-r for the word "hamburger," Miranda offered "because it has 'ham' in it" (April 1995, Task 3). She couldn't explain how she knew the spelling was supposed to have this word in it, but she clearly realized that comparing one word to a similarly sounding word could help her spell the target word. This was a big step for Miranda, who in November seemed to essentially limit herself to sounding words out.

Remembering own spelling/Experience spelling the word/Visualizing a word. In November Miranda reflected on having recently spelled the word "people," one of the target words, which suggests that she referred to that earlier spelling when attempting to spell this word. She explained to me "that's what I spelled yesterday" and proceeded to spell the word P-e-L (November 1994, Task 1).

In April Miranda again reflected on her own experience spelling a word. When claiming that the spelling m-o-t-h-r for the word "mother" was correct, she told me "because I wrote it down one time. Cause that's how I write it" (April 1995, Task 2).

Seeing a spelling elsewhere/Learning a spelling in class. Miranda did not report having seen any of the target words elsewhere during the November interview, however she did use this strategy in April when she explained how she knew how to spell the word

"butterfly" by telling me: "my uncle did it [spelled it] yesterday, maybe Sunday" (April 1995, Task 1).

Knowing a spelling/Using word-specific spelling knowledge. When discussing the word "elephant," Miranda reported that she had specific knowledge about the spelling if the word, which she spelled E-L-F-I-N-T: "Elephant. So it starts with an E. Sounds like it's an A but it's an E" (November 1994, Task 1).

Word Segment-Based Strategies

Specific spelling of a word segment/Spelling rules. Miranda did not employ any rules in regard to the spellings of the November set of words. In April, however, she expressed awareness of the use of the morpheme "-ing" and of how it was spelled. When I asked why she had added i-n-g to s-l-e-p (for "sleeping") as an afterthought, Miranda explained:

Miranda: Because that's what we do.

Cathy: Why?

Miranda: That means sleeping.

Cathy: So this part ["ing"]...?

Miranda: Is "ing".

Cathy: And that adds what to the word?

Miranda: "ing."

(April 1995, Task 1).

Even though she could not explain what function "ing" serves on the end of words, clearly she does have some understanding of how it is represented.

Letter-Based Strategies

Sounding out. In discussing the given spellings in the November Right/Wrong and Choosing Tasks, Miranda consistently referred to the initial letter or consonant cluster in the spellings when justifying her choice. Look, for example, at her explanations for deciding whether "stamp" and "shark" were spelled correctly:

Miranda: Stamp [Stating the word represented by the picture].

[She reads the spelling s-t-a-p as "stop," then says "stamp" to herself.]

Wrong.

Cathy: Okay, do you know why?

Miranda: Yes, because "stamp" starts with an S and it doesn't have a T.

(November 1994, Task 2).

Miranda: Shark [Stating the word shown in the picture].

sh- shark [To herself].

It's wrong.

Cathy: It's wrong? How come?

Miranda: sh- [To herself].

Cause the H has to be there, there's no S.

Cathy: There's no S?

Miranda: Mm mm [no].

(November 1994, Task 2).

As you can see in these examples, Miranda was rarely able to thoroughly explain her choice. Often when explaining her choice in the Choosing Task, she based it on the fact that the initial letter was right, despite the fact that all four words began with the same letter. In some cases, when I pressed her for more explanation, she pointed out the final letter of the word, such as "Cause it has a G at the [end] of 'playing'" (November 1994, Task 3). Again, it was usually the case that more than one word started and ended with the same letters. In each case I pointed this out to her, but she could not explain herself better, she merely insisted that she had picked the right one. One other thing worth mentioning here is that Miranda seemed not to be able to perceive initial consonant clusters, and instead focused on one component of the cluster. In the word "stamp" she insisted there was no T, just the S, and in the word "shark" she felt there was no S, just an

H. This is consistent with research in invented spelling, as discussed by Treiman (1993), who suggests this may be tied to phonemic awareness.

In April Miranda appeared to rely less on sounding words out, although she did continue to use it as a strategy in spelling words with which she was not familiar. When I asked her why she spelled the word "mittens" m-i-n-t-i-n, Miranda told me "That's how I hear the sounds sometimes" (April 1995, Task 1). In regard to her perception of initial consonant clusters, she appears to have mastered this by the time of the April interview. Her invented spellings reflected an accurate perception of the clusters, and when explaining her choices during the Right/Wrong Task, she did not have any problems accepting the existence of consonant clusters in the spellings of the words. This more advanced level of phonemic awareness is evident in her spellings c-l-a-p, for the word "clap," s-h-o-s, for the word "shoes," p-r-e-s-i-t-n-s, for the word "presents," and in her argument that the correct spelling for the word "train" is t-r-e-i-n and not t-r-a-i-n (April 1995, Task 1&2). The only word that she had difficulty in perceiving an initial consonant cluster was the word "smile," for which she chose the spelling s-i-e-l-l as the correct spelling (April 1995, Task 3).

Specific letter-sound knowledge. Miranda did not report using any particular letter-sound knowledge in spelling words during either interview. Whereas several of the other children knew about P-H and it's relationship to the sound /f/, Miranda did not demonstrate this knowledge, spelling "telephone" as T-e-l-o-f-o-n (April 1995, Task 1). She may or may not have been aware that /s/ can often be represented by a C, as she chose the spelling j-u-i-c-e as the correct form of that same word. Because she did not make knowledge of this sort explicit, we would have to look at this aspect of her spelling more closely before we could claim that she did indeed possess and use this knowledge when spelling the word "juice."

Spelling Attitudes and Concerns

The data also suggests that these children have particular attitudes and concerns about spelling.

Concern with Written Form.

When spelling, several of the children seemed to be concerned with the written form of their spellings. They often commented on errors in letter formation, or on the fact that they had written the wrong letter, or that they changed their mind about the spelling and therefore needed to start over.

Jeanie seemed to make these sorts of comments quite often, saying about her writing of "people," for example, "Oh I guess that's [her second P] too low...I guess I'll cross it [the word] out." She crossed P-e-p out and started over, writing P-e-P-o-l-l. When writing "jumping," which she spelled J-a-p-e-G, Jeanie misformed her G, and pointed this mistake out with "I did that G the wrong way." She chose not to correct this error. (At the time of the interview I wasn't aware of it, but this proved to be a very common mistake for Jeanie, and something she had been working on fixing. In her daybook she consistently formed her capital G in this same way: ⅁) In her first spelling of "water," Jeanie's D ended up looking like an A. ("Now that should be a D it's not a A.") so she crossed it out and wrote the word over, ending up with the spelling W-o-d-r. In writing "bicycle," Jeanie crossed out B-u-s-k and started over, writing B-u-s k-o-l-l. She didn't explain this as an error, she merely explained "I have to write that again" (November 1994, Task 1). She seemed to be constantly monitoring her writing so that it was just right.

Miranda also appeared slightly concerned with the final form of her spellings. She had trouble forming her J in her spelling J-M-B for "jump" and verbalized her difficulty (she made a noise to indicate that she had goofed and explained "That's a J") (November 1994, Task 1). However, she did not seem to monitor her end product as closely as Jeanie did, for this was the only example I have of her doing this at all.

Kevin too expressed concern with the form of his words. Having written too closely to the top of the index card, he announced "I'm gonna cross that out." When writing his F in E-L-A-F-E-N-T for the word "elephant," Kevin had a little trouble forming the F. He explained to me that he "...made a curve," indicating he had made an error in trying to form a capital F, and tried again. He did the same thing on his second try, but fixed his mistake without starting over: "I was- I was gonna write a F. So I have to make it (the top horizontal line of the F) a little bit thicker" (November 1994, Task 1).

Part of these children's concern, I believe, is wanting to make their writing as clear as possible for anyone who might be reading their writing in the future, including themselves. It's good that they are aware at such an early age of the audience involved in writing.

Willingness to Accept Different Spellings.

One of the things that concerns some adults about teachers encouraging children to invent spellings, rather than stressing correct spelling, is that children will get the impression that the way they may have spelled a particular word is a proper[11] way of spelling it, and will continue to spell the word that way. This is not necessarily so, and by looking at children's willingness to accept a number of different spellings for the same word, we can see that these children are aware that their invented spellings are only possible spellings, not necessarily the standard English spelling.

Anna, Jeanie and Kevin offer several examples of their willingness to accept a number of different spellings for the same word. Let us first take a look at an exchange between myself and Anna concerning the spelling of the word "brother."

Anna: Brother.

Cathy: Ok, so which of those spellings do you think works better?

Anna: This one [pointing to b-r-u-t-h-e-r].

[11]Where "proper" means that others outside the classroom environment recognize and use this spelling.

Cathy: The first one? And how come you think so?

Anna: Because it has T-H-E-R and this one [b-o-t-h-r] doesn't doesn't have the-- um, the E is not in the middle and it's supposed to be in the middle.

Cathy: And how 'bout the other spellings?

Anna: Um, well these two [b-u-t-h-e-r and b-r-o-t-h-e-r] are right, but like- like this one, but this one's [b-o-t-h-r] not right.

Although Anna has selected the spelling b-r-u-t-h-e-r for the word "brother," she is willing to accept the possibility that two of the other three spellings may also spell "brother". She seems to have focused her attention on whether or not the spelling ends in e-r. Somehow she has come to the conclusion that the word "brother" must end in e-r, therefore the spelling that does not, b-r-o-t-h-r, could not possibly be correct.

Jeanie suggested the a similar thought when choosing what she thought was the correct spelling for "drink":

Jeanie: The first one [d-r-e-k]

Cathy: The first one? And how come you picked that one?

Jeanie: Because it's "duh" "rr" "ink".

Cathy: And none of the others have that--

Jeanie: Well it could have been that one [j-r-i-n-k]. (November 1994, Task 3).

Just like Anna did with "brother," Jeanie conceded that more than one of the spellings on the card said "drink".

Kevin also was willing to accept various spellings for the same word. He chose both d-r-i-n-k and j-r-i-n-k as possible spellings for "drink," and also felt that b-r-o-t-h-e-r and b-r-u-t-h-e-r were possible spellings for "brother" (November 1994, Task 3).

Clearly these children realize that invented spellings are not set in stone; they can change their mind about spellings freely, and they can reinvent spellings if they so choose.

Rethinking Original Spellings.

As I have just suggested, these children are aware that inventing a spelling is just that, an "invention", and is not necessarily a standard form accepted by all writers. In fact, the children often changed their spellings at the time they were first invented. Take for example Kevin, whom I observed rethinking his spelling of "telephone" in April during Task 1. He began with spelling the word "phone," because he knew that was part of the word "telephone" and wanted to write that part down first. He wrote P-o-g-h-o-n for "phone," and then proceeded to write t-e-l-P-h-o-n for "telephone" directly beneath his original spelling of "phone." Perhaps he changed his original spelling of "phone" because he was aware that I was interested in seeing him spell "telephone" and assumed I wanted him to try and spell it right. Regardless of the reason for changing his spelling, in a matter of minutes he had invented two very different spellings for the same word.

Throughout the children's daybooks they have reinvented many of their spellings of words. Jeanie has invented three different spellings of the word "like," and seems to reinvent it almost every time she spells it. She has spelled it L-A-K, L-A-C-K, and L-i-c-k, and perhaps has spelled it in other ways of which I am not aware. Miranda has invented the word "my" in several different ways, from M-I, to M-i-e, and even the correct form m-y. Amy has written "went" as w-i-n-t, w-a-n-t, and w-n-t. And, finally, Kevin has invented his own spelling of "Frankenstein," spelling it F-r-a-i-n-g-c-i-n-s-i-n, even after he had already copied it correctly into his daybook.

Knowing that these children are willing to reinvent spellings, and often do, suggests that they view invented spelling as a strategy in itself. When they don't know how to spell a word correctly, they invent a spelling so that they can get their message down in print. Inventing spellings allows them to get on with what they want to write rather than getting hung up on a certain word, and also encourages them to think about spelling.

CONCLUSION & IMPLICATIONS

What have we learned from examining the thinking process of these five first graders as they invented spellings? First, we have seen that they consciously used a number of different strategies when trying to figure out the spelling of words, and that the number of different strategies they used in inventing spellings increased over time. We have also seen that these children do not seem to have any problem accepting their invented spelling as just a possible spelling, and not necessarily the only spelling of that word.

Why are these two points important? In the case of the conscious strategies employed by these children to invent spellings, this sort of insight would be very useful to the classroom teacher when it comes to trying to personalize spelling instruction for the children. By examining children's conscious strategies, the teacher will become aware of some of the preconceptions individual children have about the spelling process, and spelling rules. For example, instead of assuming that none of the children have a concept of silent "e", the teacher would know for which children this is true, and for which children this rule may need to be straightened out. Kevin would be utterly bored by a lesson on silent E, instead he would benefit much more from instruction directed to his over-generalization of the rule.

In addition, by focusing on the children's conscious thoughts about spelling as opposed to focusing on their resultant spellings, teachers can learn much more about each child. This goes for all performance in school as well, not just spelling. My initial impression of Anna, which developed during my first month and a half of observation, was based on the way she used her daybook writing time, and the writing that she produced during this time. As I mentioned before, none of her activity seemed especially interesting. From this initial impression Anna appeared not to reflect much on her writing, and relied on one particular form when writing ("when I was five I..."). Any of Anna's teachers could easily get this same impression. Because the educational system

tends to value the result over the process, Anna might fall through the cracks. Her process, however, revealed that she is very reflective about her writing. Her teacher, and teachers in general, could learn quite a lot about children like Anna by taking a look at what goes into creating each product, rather than focusing on the end result.

When it comes to the children's attitudes about invented spelling, in order for invented spelling to work as an instructional tool in the classroom, children have to be willing to accept their spellings as possible spellings, and not get hung up on what the proper spelling is. These five first graders seemed to handle this distinction quite well. They appeared to reinvent most of their invented spellings every time they wrote them, and did not tend to reproduce incorrect spellings that they had invented. This is important when assuring parents that we as educators are not neglecting their children's spelling skills by encouraging invented spelling, but are in fact helping their children to gain a better understanding of the spelling system by allowing them to construct it for themselves, instead of learning about it by rote memorization.

Whole Word-Based Strategies	November 1994		April 1995	
Spelling by analogy	(5)	.128	(11)	.098
Remembering own spelling /Experience spelling the word /Visualizing a word	(1)	.026	(14)	.125
Seeing a spelling elsewhere /Learning a spelling in class	(0)		(14)	.125
Knowing the spelling of the target word / Knowledge specific to the target word	(8)	.205	(6)	.054
Word Segment-Based Strategies				
Specific spelling of a word segment / Spelling rules	(3)	.077	(16)	.143
Letter-Based Strategies				
Sounding out	(22)	.564	(43)	.384
Specific letter-sound knowledge	(0)		(8)	.071

Table 1. Percentages for strategies reported in November 1994 versus April 1995. The number in parentheses indicates the number of reported occurrences.

Whole Word-Based Strategies	Task 1	Task 2	Task 3
Spelling by analogy	.09	.067	.079
Remembering own spelling /Experience spelling the word /Visualizing a word	.13	.10	.079
Seeing a spelling elsewhere /Learning a spelling in class	.13	0	.18
Knowing the spelling of the target word / Knowledge specific to the target word	.098	.267	.11
Word Segment-Based Strategies			
Specific spelling of a word segment / Spelling rules	.098	.067	.18
Letter-Based Strategies			
Sounding out	.40	.43	.37
Specific letter-sound knowledge	.05	.067	.05

Table 2. Percentages for strategies reported in each task.
(Task 1=Spelling Task. Task 2=Right/Wrong Task. Task 3=Choosing Task.)

Whole Word-Based Strategies	Amy	Anna	Jeanie	Kevin	Miranda
Spelling by analogy	+	+	+		
Remembering own spelling /Visualizing a word					+
Seeing a spelling elsewhere /Learning a spelling in class					
Knowing the spelling of the target word / Knowledge specific to the target word	+	++		+	+
Word Segment-Based Strategies					
Specific spelling of a word segment / Spelling rules			+	++	
Letter-Based Strategies					
Sounding out	++	+	++	+	++
Specific letter-sound knowledge					

Table 3. Degree to which strategies were reported by the individual children in November 1994. (+) indicates the strategy was reported less than 30% of the time, (++) indicates the strategy was reported at least 30% of the time, and a blank space means it was not reported at all.

Whole Word-Based Strategies	Amy	Anna	Jeanie	Kevin	Miranda
Spelling by analogy	-	-	-		-
Remembering own spelling /Visualizing a word		--			-
Seeing a spelling elsewhere /Learning a spelling in class		--		--	-
Knowing the spelling of the target word / Knowledge specific to the target word		-		-	
Word Segment-Based Strategies					
Specific spelling of a word segment / Spelling rules	-	-	-	--	-
Letter-Based Strategies					
Sounding out	--	-	--	--	--
Specific letter-sound knowledge	-		-	-	

Table 4. Degree to which strategies were reported by the individual children in April 1995. (-) indicates the strategy was reported less than 30% of the time, (--) indicates the strategy was reported at least 30% of the time, and a blank space means it was not reported at all.

Appendix A.
Word List, November 1994

Task 1	Task 2	Task 3
pencil	little	brother
people	stamp	drink
umbrella	shark	playing
thumb	dinosaur	night
jumped[12]	cats	truck
fruit		
elephant		
water		
bicycle		
watches		
sandwich		

[12]Unfortunately this word was very difficult to get across to the children. In the end some of the children wrote "jump," and some wrote "jumping." No one wrote "jumped," as I had originally intended.

Appendix B.
Word List and Given Spellings for Task 2: Right/Wrong Task, November 1994

Given Word	Given Spelling
little	litl
stamp	stap
shark	shark
dinosaur	dinasor
cats	cats

Appendix C.
Word List and Given Spellings for Task 3: Choosing Task, November 1994

Given Word	Given Spellings
brother	brother brothr bruther buther
drink	drink drik jrink drek
playing	playing plaing plaeying plang
night	night nit nigt nite
truck	truck turck chruck truk

Appendix D.
Word List, April 1995

Task 1	Task 2	Task 3
mittens	eggs	cheese
lamp/light	mother	towel
telephone	bottle	hamburger
shoes	train	juice
butterfly	chair	smile
popsicle		
clapped[13]		
knife		
pumpkin		
sleeping		
presents		

[13] As with the word "jumped," "clapped" was difficult to convey, and I found myself having to say the word for the children

Appendix E.
Word List and Given Spellings for Task 2: Right/Wrong Task, April 1995

Given Word	Given Spelling
eggs	egz
mother	mothr
bottle	bottle
train	train
chair	chare

Appendix F.
Word List and Given Spellings for Task 3: Choosing Task, April 1995

Given Word	Given Spellings
cheese	cheese cheez cheze tchese
towel	towel tawl towl tawel
hamburger	hamburger hambugger haburger habergr
juice	juice jus juise juce
smile	smile smail siell smiel

REFERENCES

Chomsky, C. (1976). Approaching reading through invented spelling. ERIC Document 155630.

Ginsburg, H., & Opper, S. (1988). Piaget's theory of intellectual development (third edition). Englewood Cliffs, NJ: Prentice Hall.

Henderson, E. H. (1985). Teaching spelling. Palo Alto, CA: Houghton Mifflin.

Henderson, E. H. (1981). Learning to read and spell: The child's knowledge of words. DeKalb: Northern Illinois University Press.

Read, C. (1986). Children's creative spelling. Boston: Routledge & Kegan Paul.

Read, C. (1971). Pre-school children's knowledge of English phonology. Harvard Educational Review, 41 (1), 1-34.

Treiman, R. (1993). Beginning to spell. New York: Oxford University Press.